narrow stand of deciduous trees at the ravine. It may well be that *B. zetides* demands extensive stands of forest.

It may also be instructive to compare the old La Vega locality and Marión's Las Auyamas locality with Las Abejas. The former lies much lower (assuming that the specimen(s) came from La Vega itself, an unlikely possibility) but is in a basically mesic area (presently much cultivated but with *cafetales* and *cacaotales* and their high-canopy shade-trees). If the La Vega material came from south of that city on the northern slopes of the Cordillera Central, these slopes today are open pine woods with some deciduous forest in wide ravines (as below Buena Vista). The latter may well be or have been satisfactory for *B. zetides*, but we visited this area in June 1981 and saw no individuals. Las Auyamas on the other hand is in the uplands of the Sierra de Baoruco. This area presumably was once well forested, since there are still extensive *cafetales* with their shade trees present (=pseudoforest). The junior author visited the Las Auyamas area on 4–6 August 1980, but the weather conditions, due to the passage of Hurricane Allen, were not propitious for butterfly collecting. Still, the area about Las Auyamas seems suitable for *B. zetides* and rather comparable to that at Las Abejas.

We are grateful to the staff of the Alcoa Exploration Company, especially to Sr. Alfredo Lebrón and Sr. Victor García, for allowing us to stay at their facility at Cabo Rojo; without the loan of the jeep from the Museo Nacional under the directorship of Dr. Marcano, the trip to Las Abejas would have been more arduous, and we are grateful to him and his staff for their assistance. The illustration is the work of Kurt M. Iketani; we acknowledge his efforts with pleasure.

FRANK GALI, *156 S. Melrose Dr., Miami Springs, Florida 33166* AND ALBERT SCHWARTZ, *Miami-Dade Community College, North Campus, Miami, Florida 33167.*

Journal of the Lepidopterists' Society
37(2), 1983, 174–176

PUPAL SIZE AND EGG PRODUCTION CHARACTERISTICS IN *ROTHSCHILDIA FORBESI* (SATURNIIDAE)

Rothschildia forbesi Benjamin occurs in the United States in the Rio Grande Valley, Texas. According to Ferguson (*in* R. B. Dominick et al., 1972, The Moths of America North of Mexico, fasc. 20.2B, Bombycoidea) there is only limited information available on the biology and early stages of this species. During 1981 I used a series of 23 wild *R. forbesi* pupae, and five of the subsequent adult females to collect data for methods development modeling. The *R. forbesi* were used simply because they were available for study at the time a modeling data set was needed. However, the data that were collected, aside from being used for methods development research, provide fundamental information on pupal dimensions and egg production characteristics for this little-studied species.

Pupal sex was determined by examining the genital openings, which were very distinctive in the *R. forbesi* pupae studied. Males had a single opening on the venter of the 9th abdominal segment; and females had single openings on the venter of the 8th and the 9th abdominal segments. All pupal sex determinations were confirmed at adult emergence. Pupal weights and dimensions, determined as described by Miller et al. (1982, J. Lepid. Soc. 36:207–216), are summarized in Table 1. Mosher (1916, Ann. Entomol. Soc. Amer. 9:136–158) described pupae of *Rothschildia orizaba* (Westwood) and *R. cincta cincta* (Tepper) (the latter under the name *R. jorulla*; see C. Lemaire, 1978, Les Attacidae Americains, Attacinae, Neuilly-sur-Seine, France), indicating that *R. orizaba* pupae were 23–27 mm in length and about 50 mm in circumference; while

TABLE 1. Weights and dimensions of *Rothschildia forbesi* pupae.

Measurement[1]	Mean ± S.D.	
	Male (n = 12)	Female (n = 11)
Weight	2.06 ± 0.22	3.20 ± 0.48
Length	27.65 ± 1.25	29.85 ± 1.73
Width	11.20 ± 0.39	13.70 ± 0.81
Circumference	37.91 ± 2.31	45.45 ± 2.98
Antenna length	11.58 ± 0.51	13.08 ± 0.99
Antenna width	3.50 ± 0.52	3.09 ± 0.30
Antenna length to width ratio	3.38 ± 0.55	4.23 ± 0.46

[1] Weights in g; dimensions in mm.

R. jorulla pupae were 25–28 mm in length and about 45 mm in circumference. She did not discuss *R. forbesi* pupae, nor did she state the numbers or sexes of pupae of the other *Rothschildia* species she examined. The information presented here for *R. forbesi* (Table 1), however, is in general agreement with the sizes reported by Mosher (1916) for the other species of *Rothschildia*.

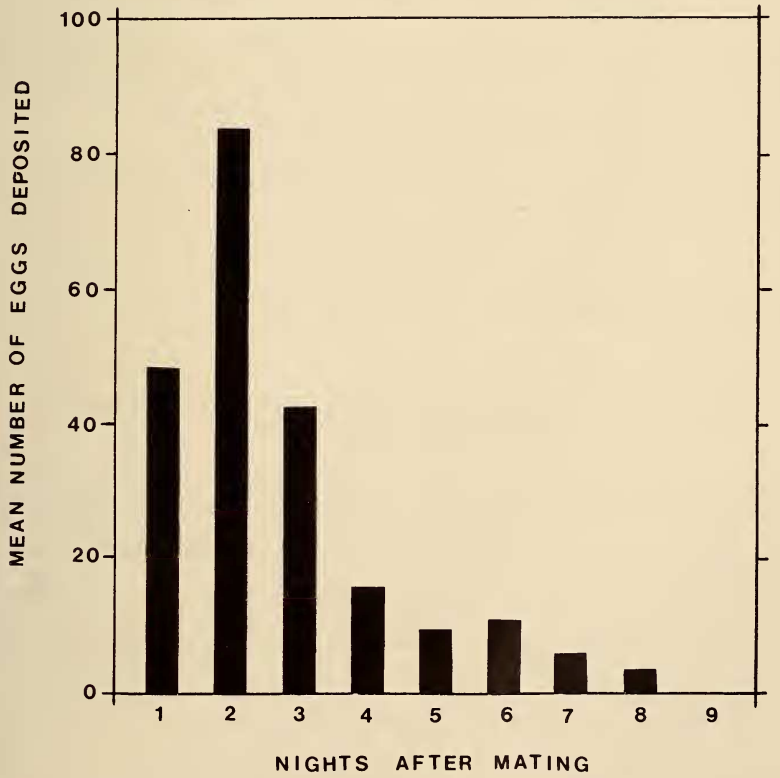

FIG. 1. Oviposition pattern for *Rothschildia forbesi* females.

Five of the females that emerged were mated, and eggs were collected in paper bags each night thereafter until death occurred. Later, the bags were cut open and all eggs were counted. To determine total egg complement the abdomen of each female was dissected after death and eggs remaining in the ovaries were counted. The average egg complement was 232.40 ± 42.76; the average number of eggs deposited was 216.2 ± 53.14. Thus, on a percentage basis the females deposited an average of 92.95 ± 13.48 percent of the eggs they emerged with. The only known information on *R. forbesi* egg production is the report by Collins and Weast (1961, Wild Silk Moths of the United States, Collins Radio Co., Cedar Rapids) that one female laid "all" of her eggs (156) in one night. In the *R. forbesi* studied here, the average longevity after mating was 7.80 ± 0.84 nights; most of the deposited eggs (>80 percent) were laid during the first three nights after mating. None of the females deposited all eggs in any one night. The three-night average for eggs was 57.92 ± 11.42. There was a positive correlation between egg complement and the three-night average for eggs ($r = 0.70$), which is described by the following regression equation, where E_{d3} = three-night average eggs and E_t = egg complement:

$$E_{d3} = 25.35 + 0.15E_t$$

The oviposition pattern for *R. forbesi* (Fig. 1) is similar to patterns known for other giant silkworm moths (*Hyalophora cecropia* (L.), Tashenberg & Roelofs, 1970, Ann. Entomol. Soc. Amer. 63:107–111; *Hyalophora gloveri gloveri* (Strecker), Miller, 1978, J. Lepid. Soc. 32:233–234; *Callosamia promethea* (Drury), Miller & Cooper, 1977, J. Lepid. Soc. 31:282–283; *Antheraea polyphemus* (Cramer), Miller & Cooper, 1980, J. Lepid. Soc. 34:256–259).

The author acknowledges with gratitude the assistance of R. S. Peigler, who collected the *Rothschildia forbesi* pupae at Harlingen, Texas, in January 1981. The opinions contained herein are those of the author and should not be construed as official or reflecting the views of the Department of the Army.

THOMAS A. MILLER, *U.S. Army Medical Bioengineering R&D Laboratory, Fort Detrick, Maryland 21701.*

Journal of the Lepidopterists' Society
37(2), 1983, 176–177

OCCURRENCE OF *MEGISTO CYMELA* (SATYRIDAE) AT FLOWERS, WITH A BEHAVIORAL NOTE

Most Satyridae are thought not to normally utilize nectar sources (Emmel, 1975, *in* Howe (ed.), The Butterflies of North America, p. 80). *Megisto cymela* (Cramer) to my knowledge has never been recorded visiting flowers. On 9 July 1980 and 5 July 1981 I observed repeated nectaring by this species on staghorn sumac, *Rhus typhina* L., in Philadelphia, Pennsylvania.

The habitat is a burn area dominated by the grass *Andropogon scoparius*. There are many clumps of trees and shrubs invading this area, such as gray birch (*Betula populifolia*), bigtooth aspen (*Populus grandidentata*), hawthorns (*Crataegus* spp.), cherries (*Prunus* spp.), and staghorn sumac (*Rhus typhina*). It is surrounded by a climax Transition Zone woodland which is part of the Wissahickon Creek Ravine in Fairmount Park, Philadelphia. This burn scar, where the butterflies were seen, is actually at the top of part of this ravine about 104 m above sea level.

Megisto cymela is univoltine here, emerging in mid or late June, with worn individuals being found in August. These common butterflies are usually found flying near the ground in their characteristic weak dancing or skipping manner, moving in and out